Christopher R. Ruehl, Ph.D.

CONTACT INFORMATION

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RESEARCH INTERESTS

Chemistry of atmospheric particles, including the surface activity and oxidation mechanisms of organic compounds in these particles
Climate and health effects of atmospheric particles

CURRENT EMPLOYMENT

Postdoctoral Scholar, **Lawrence Berkeley National Lab** — *2012 – present*
PI: Kevin Wilson

Adjunct Professor, **University of San Francisco** — *2012 – present*
Course taught: Environmental Chemistry

RECENT EMPLOYMENT

Postdoctoral Scholar, **UC Berkeley** — *2010– 2012*
PI: Professor Allen Goldstein

Postdoctoral Scholar, **UC Davis** — *2009 – 2010*
PI: Professor Michael Kleeman

GRADUATE EDUCATION

The University of California, Santa Cruz

Ph. D., Earth & Planetary Sciences Department — *2009*
Thesis title: Ambient organic aerosols - where they come from and where they are going (some more slowly than others)
Advisor: Associate Professor Patrick Y. Chuang

M. S., Earth & Planetary Sciences Department, 2004 — *2004*
Thesis title: Streambed seepage, river chemistry, and nitrogen cycling in the Pajaro River, central California
Advisor: Professor Andrew T. Fisher

K–12 TEACHING EXPERIENCE

Waltham High School, Waltham Public Schools, MA — *2000 – 2001*
Principal: John Graceffa
Classes taught: Chemistry, Intergated Science

Skyline High School, Oakland Unified School District, CA — *1998 – 2000*
Principal: Lois Walker
Classes taught: Physical Science, Biology

UNDERGRADUATE EDUCATION

Rice University, Houston, TX — *1998*
Bachelor of Science, Chemical Engineering
Graduated *cum Laude*

PUBLICATIONS

Chan, A., Isaacman, G., Wilson, K., Worton, D., Ruehl, C. R., Nah, T., Gentner, D., Dallmann, T., Kirchstetter, T., Harley, R., Gilman, J., Kuster, B., de Gouw, J., Offenberg, J., Kleindienst, T., Lin, Y., Rubitschun, C., Surratt, J., Hayes, P., Jimenez, J.-L., and Goldstein, A.: Detailed chemical characterization of unresolved complex mixtures in atmospheric organics: Insights into emission sources, atmospheric processing and Secondary Organic Aerosol formation, *Journal of Geophysical Research*, submitted. *2013*

1. Ruehl, C., Nah, T., Isaacman, G., Worton, D., Chan, A., Kolesar, K., Cappa, C., Goldstein, A., and Wilson, K.: The influence of molecular structure and aerosol phase on the heterogeneous oxidation of normal and branched alkanes by OH, *Journal of Physical Chemistry A*, 117 (19), 3990-4000.

2. Raatikainen, T., Nenes, A., Seinfeld, J. H., Morales, R., Moore, R. H., Lathem, T. L., Lance, S., Padro, L. T., Lin, J. J., Cerully, K. M., Bougiatioti, A., Cozic, J., Ruehl, C. R., Chuang, P. Y., Anderson, B. E., Flagan, R. C., Jonsson, H., Mihalopoulos, N., and Smith, J. N.: Worldwide data sets constrain the water vapor uptake coefficient in cloud formation, *Proceedings of the National Academy of Sciences (USA)*, 110 (10), 3760-3764.

3. Harmon, C. W., Ruehl, C. R., Cappa, C. D., and Wilson, K. R.: A statistical description of the evolution of cloud condensation nuclei activity during the heterogeneous oxidation of squalane and bis(2-ethylhexyl) sebacate aerosol by hydroxyl radicals, *Physical Chemistry Chemical Physics*, 15 (24), 9679-9693.

4. Ruehl, C. R., Chuang, P. Y., Nenes, A. N., Cappa, C. D., Kolesar, K. R., and Goldstein, A. H.: Strong Evidence of Surface Tension Reduction in Microscopic Aqueous Droplets, *Geophysical Research Letters*, 39 (23), L23801. *2012*

5. Isaacman, G., Chan, A. W. H., Nah, T., Worton, D. R., Ruehl, C. R., Wilson, K. R., and Goldstein, A. H.: Heterogeneous OH Oxidation of Motor Oil Particles Causes Selective Depletion of Branched and Less Cyclic Hydrocarbons, *Environmental Science & Technology*, 46 (19), 10632-10640.

6. Ge, X., Zhang, Q., Sun, Y., Ruehl, C. R., and Setyan, A.: Effect of aqueous-phase processing on aerosol chemistry and size distributions in Fresno, California, during wintertime, *Environmental Chemistry*, 9, 221-235.

7. Ruehl, C. R., Ham, W. A., and Kleeman, M. J.: Temperature-induced volatility of molecular markers in ambient airborne particulate matter, *Atmospheric Chemistry and Physics*, 11, 67-76. *2011*

8. Ham, W. A., Ruehl, C. R., and Kleeman, M. J.: Seasonal Variation of Airborne Particle Deposition Efficiency in the Human Respiratory System, *Aerosol Science and Technology*, 45, 795-2011.

9. Ruehl, C. R., P. Y. Chuang, & A. Nenes, Aerosol hygroscopicity at high (99 to 100%) relative humidities, *Atmospheric Chemistry and Physics*, 10, 1329–1344. *2010*

10. Hatch, C. E., A. T. Fisher, C. R. Ruehl, & G. Stemler, Spatial and temporal variations in streambed hydraulic conductivity quantified with time-series thermal methods, *Journal of Hydrology*, 389, 276–288.

11. Ruehl, C. R., P. Y. Chuang, & A. Nenes, Distinct CCN activation kinetics above the marine boundary layer along the California coast, *Geophysical Research Letters*, 36, L15814, doi:10.1029/2009GL038839. *2009*

12. Ruehl, C. R., P. Y. Chuang, & A. Nenes, How quickly do cloud droplets form on atmospheric particles? *Atmospheric Chemistry and Physics*, 8, 1043–1055. *2008*

13. Ruehl, C. R., A. T. Fisher, M. Los Huertos, S. D. Wankel, C. G. Wheat, C. Kendall, C. E.Hatch, & C. Shennan, Nitrate dynamics within the Pajaro River, a nutrient-rich, losing stream, *Journal of the North American Benthological Society*, 26, 191–206. *2007*

14. Ruehl, C. R., A. T. Fisher, C. E.Hatch, M. G. Stemler, & C. Shennan, Differential gauging and tracer tests resolve seepage fluxes in a strongly-losing stream, *Journal of Hydrology*, 330, 235–248. *2006*

15. Hatch, C. E., A. T. Fisher, J. S. Revenaugh, J. Constantz, & C. R. Ruehl, Quantifying surface water-groundwater interactions using time series analysis of streambed thermal records: method development, *Water Resources Research*, 42, W10410, doi:10.1029/2005WR004787.

AWARDS / FELLOWSHIPS

- STEPS Institute for Innovation in Environmental Research, Research Grant, 2006
- National Science Foundation Graduate Research Fellowship, 2002–2005
- Sigma Xi, 1998
- Phi Beta Kappa, 1998